Louisiana Department of Transportation and Development

Traffic Control Standard Number 1

Traffic Signal Head Assemblies



Revised March 31, 2025

LA DOTD TCS #1 Product ID No. – See Below

DESCRIPTION

This specification sets forth the requirements for traffic signal head assemblies. Assemblies must adhere to the requirements set forth in the currently adopted MUTCD as per LADOTD Traffic Engineering Manual.

Note: All drawings contained herein are for general design and/or installation information only.

TRAFFIC SIGNAL HEAD ASSEMBLIES

Product ID 54410 – 1-Section Assembly Product ID 54411 – 3-Section Assembly Product ID 54412 – 4-Section Vertical Assembly Product ID 54413 – 4-Section Cluster Assembly Product ID 54414 – 5-Section Cluster Assembly

GENERAL

Each section of an assembly shall be supplied with the following:

- One (1) Cap Visor and Installation Hardware
- One (1) Six (6) Position Terminal Block

HOUSING

<u>Material</u>

Housing and doors shall be constructed of die cast aluminum or polycarbonate.

Die cast aluminum housings shall meet the requirements of and be an alloy designation listed in ASTM B-85 with a minimum yield tensile strength of 20 ksi. Aluminum must be finished on the outside, with a black powder coating or high-grade black enamel that is peel and chip resistant. Each housing shall be pre-drilled and threaded for the stainless steel machine screws and/or non-corrosive hardware that will be used to attach the visor, LED module and backplate.

Polycarbonate housings shall be constructed of one (1) piece black injection molded resin and include metal inserts that have been threaded for the stainless steel machine screws and/or non-corrosive hardware that will be used to attach the visor, LED module and backplate.

Note: Self-tapping screws will not be accepted in any circumstance.

Doors & Seals

Housing doors must be designed to accommodate the installation of any manufacturer's 12-inch LED module. Doors shall be hinged and held securely to the body of the housing by a stainless steel locking device. Locking device shall be operable without the use of

tools. Hinge pins shall prevent the housing door from accidentally disconnecting from the housing when it is opened, regardless of the signal position.

A weather-resistant, mildew-proof neoprene or silicone rubber sponge gasket shall be installed between the body of the housing and the housing door to prevent dust and moisture from entering the assembly.

Connections

Multi-section assemblies must be weather tight and securely fastened to each other. To prevent breakage from shock, the portion of the housing that will be adjacent to the mounting bracket shall be reinforced.

Each housing section must be capable of being rotated 360 degrees about its mounting axis and shall be capable of locking at 5-degree intervals horizontally. Locking must be accomplished by the engagement of serrations in adjacent signal sections and the mounting bracket assembly.

For mounting purposes, the top and the bottom of each traffic signal housing configuration must be able to accommodate a Pelco Model No. AG-0125 <u>and</u> Pelco Model No. SE-0545, or equal mounting devices. Each opening must be provided with a fitting to prevent the entry of foreign material (e.g. dust, insects, and moisture).

The 4-section and 5-section cluster assemblies must be connected utilizing two (2) twoway tri-stud upper arms, Pelco Model No. SE-5059 or equal. See **Figure 6** for general design information.

VISORS

Product ID No. 10948:	Aluminum Cap Visor
Product ID No. 10949:	Aluminum Tunnel Visor
Product ID No. 56110:	Aluminum Full Circle Visor
Product ID No. 56111:	Aluminum Louvered Visor
Product ID No. 50641:	Polycarbonate Cap Visor
Product ID No. 50642:	Polycarbonate Tunnel Visor
Product ID No. 56112:	Polycarbonate Full Circle Visor
Product ID No. 56113:	Polycarbonate Louvered Visor

<u>General</u>

Each housing section shall be supplied with a cap visor made of the same material as the housing. Visors should be detached from the assemblies during shipment. If cap visors are shipped detached, hardware shall be securely attached to the assembly during shipment.

<u>Material</u>

Aluminum visors must have a minimum thickness of 0.050 inches and must be finished both inside and out with a black powder coating or high-grade black enamel that is peel and chip resistant.

Polycarbonate visors must have a minimum thickness of 0.100 inches and shall be constructed from one (1) piece of injection molded black polycarbonate.

<u>Design</u>

Visors shall attach to the housing in a manner that makes the light filtration between the door and the visor imperceptible. Once installed, the visor must be capable of supporting the entire weight of the traffic signal.

Visors must tilt approximately 2 degrees to 4 degrees downward from the horizontal and shall measure 10 inches to 12 inches in depth.

Tunnel type visors shall encompass approximately 300 degrees.

Louvered type visors shall have vertically oriented louvers and encompass the full 360 degrees.

<u>Hardware</u>

Visor hardware shall consist of stainless steel machine screws and/or noncorrosive hardware.

Note: Self-tapping screws will not be accepted in any circumstance.

Visors ordered independently of those supplied with the assembly shall include the appropriate quantity of attachment hardware with each shipment. For inventory and installation purposes, the hardware shall be securely attached to the visor or visor packaging.

TERMINAL BLOCKS

Each terminal block must include two (2) mounting screws, one (1) mechanical ground lug, and six (6) isolated terminals. Each terminal of the terminal block must include at least three (3) 0.25-inch wide male quick connect tabs and two (2) screws. See **Figure 7** general design information.

LOUVERED BACKPLATES

Product ID 56114 – 3-Section Assembly Backplate **Product ID 56115** – 4-Section Vertical Assembly Backplate **Product ID 56116** – 4-Section Cluster Assembly Backplate **Product ID 56117** – 5-Section Cluster Assembly Backplate LA DOTD TCS #1 Product ID No. – See Below

<u>General</u>

All backplates shall be from the same manufacturer as the assembly.

Backplates must securely mount behind the faces of the signal configurations without obstructing any of the door openings nor the mounting assembly.

<u>Material</u>

Backplates shall be constructed of either a minimum 0.120-inch thick black plastic or a minimum 0.060-inch thick aluminum. Aluminum backplates shall be finished, with a black powder coating, a high-grade black enamel that is peel and chip resistant, or a non-chipping, black finish. High gloss finish will not be accepted. For installation purposes, backplates should be capable of supporting the entire weight of the signal assembly.

<u>Design</u>

The backplate shall be louvered with a minimum 2-inch wide retroreflective strip installed around the front outside edge of the backplate. Retroreflective strip shall not overlap onto louvers nor be installed directly on the edge of the backplate. See **Figure 1** through **Figure 5** for general information.

Retroreflective material shall be either Type VIII or XI yellow sheeting meeting the requirements of ASTM D4956 and be an approved product listed on the LADOTD Approved Materials List for Reflective Sheeting, Type VIII, Permanent (1015M00139) or Reflective Sheeting, Type XI, Permanent (1015M00241), respectively.

<u>Hardware</u>

Backplates shall be supplied with the appropriate amount of stainless steel machine screws and/or non-corrosive hardware to affix the backplate to the assembly configuration.

Note: Self-tapping screws will not be accepted in any circumstance.

FIGURE 1 1-SECTION TRAFFIC SIGNAL HEAD ASSEMBLY



FIGURE 2 3-SECTION TRAFFIC SIGNAL HEAD ASSEMBLY







FIGURE 3 4-SECTION VERTICAL TRAFFIC SIGNAL HEAD ASSEMBLY





FIGURE 4 4-SECTION CLUSTER TRAFFIC SIGNAL HEAD ASSEMBLY

FIGURE 5 5-SECTION CLUSTER TRAFFIC SIGNAL HEAD ASSEMBLY





FIGURE 6 TWO-WAY TRI-STUD UPPER ARMS

FIGURE 7 TERMINAL BLOCK



